

## Organizing Committee:

### Chairs:

**Mauro Ferrari** Professor and Director of the Division of Nanomedicine; Deputy Chairman of the University of Texas Department of Biomedical Engineering; The University of Texas Health Science Center; Professor of Experimental Therapeutics at The University of Texas M.D. Anderson Cancer Center; President of the Alliance for NanoHealth.

**Thomas J. R. Hughes** Professor, Institute for Computational Engineering and Sciences (ICES), The University of Texas at Austin

**Wing Kam Liu** Professor, Northwestern University, Department of Mechanical Engineering. ASME NanoCouncil Chair. Co-Director of the NSF Summer Institute on Nano Mechanics, Nano Materials and Nano/Micro Manufacturing

### Technical Chairs:

**Paolo Decuzzi** Associate Professor, University of Texas Health Science Center Houston and University of Magna Graecia – Italy.

**Jian Cao** Professor, Northwestern University, Department of Mechanical Engineering.

### Important Dates:

- **July 27, 2009:** Submission of Extended Abstract (2-4 pages).
- **September 28, 2009:** Author Notification of Acceptance and Abstract Review.
- **October 5, 2009:** Submission of Copyright Form (1903).
- **November 6, 2009:** Submission of Final Extended Abstract (2-4 pages).

### Accommodations

Special sleeping room rates have been arranged for attendees of the NEMB 2010. Mention ASME-NANO 2010 when making your reservation to ensure that you receive the discount rate. THE CUT-OFF DATE FOR RESERVATIONS IS FRIDAY, JANUARY 15, 2010. After this date, reservations will be accepted based upon availability. To reserve at the JW Marriott Houston call: 800-228-9290 (Toll-free).

[www.marriott.com/hotels/travel/houjw-jw-marriott-hotel-houston](http://www.marriott.com/hotels/travel/houjw-jw-marriott-hotel-houston)

### Supporting Organizations

- ANH - Alliance for NanoHealth
- ASME - American Society for Mechanical Engineers
- IACM - International Association for Computational Mechanics
- IEEE - Institute of Electrical and Electronics Engineers
- NSF Summer Institute on Nanomechanics, Nanomaterials and Micro/Nanomanufacturing
- USACM - United States Association for Computational Mechanics



## Registration Fees

Please see the table below for the number and type of fee.

| Full Advanced Registration | Registration Fees |
|----------------------------|-------------------|
| ASME Member                | \$595             |
| Non Member                 | \$695             |
| Student Member             | \$150             |
| Student Non Member         | \$200             |
| One Day Member             | \$245             |
| One Day Non Member         | \$345             |

| Full Late/On-Site Registration | Registration Fees |
|--------------------------------|-------------------|
| ASME Member                    | \$695             |
| Non Member                     | \$795             |
| Student Member                 | \$200             |
| Student Non Member             | \$250             |
| One Day Member                 | \$345             |
| One Day Non Member             | \$445             |

| Advanced Workshops/Tutorials | Registration Fees |
|------------------------------|-------------------|
| ASME Member                  | \$120             |
| Non Member                   | \$150             |
| Student Member               | \$50              |
| Student Non Member           | \$60              |

| Late/On-Site Workshops/Tutorials | Registration Fees |
|----------------------------------|-------------------|
| ASME Member                      | \$150             |
| Non Member                       | \$170             |
| Student Member                   | \$75              |
| Student Non Member               | \$85              |

The delegates fees will include: Conference Proceedings, attendance at all scientific sessions, coffee breaks, reception and banquet.

Registration will open on Friday, September 4th, 2009. On-Site/Late Rates After January 25th, 2010

### Contact:

For information on the technical program, special events, special sessions and general conference inquiries.

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For information on registration, hotels/reservations, exhibits, A/V equipment and presentations.

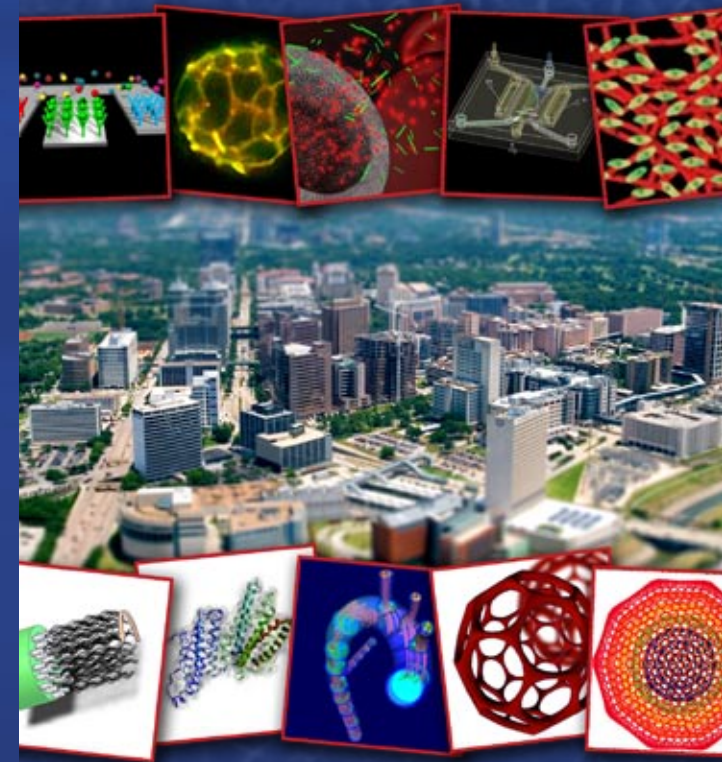
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# NEMB 2010

## ASME 2010 First Global Congress on NanoEngineering for Medicine and Biology

Advancing Health Care through  
NanoEngineering and Computing



February 7-10, 2010  
Houston, TX

[www.asmeconferences.org/NEMB2010](http://www.asmeconferences.org/NEMB2010)

## Objectives

The ASME 2010 Congress on NanoEngineering for Medicine and Biology (NEMB 2010) focuses on the integration of Engineering Sciences and Nanotechnology to aid in addressing fundamental problems in Biology and Medicine and in developing devices for the early detection, imaging and cure of diseases. The technical program comprises three main thematic areas:

- (i) NanoEngineering applied to Biomedical Sciences;
- (ii) Manufacturing and Biomaterials in Medicine;
- (iii) BioEngineering Sciences.

Topics such as NanoEngineering for medical diagnosis, therapy and imaging; Nano/Microfluidics; Regenerative Medicine; Manufacturing and Materials for Nanomedicine; Multiscale modeling in Biological systems; Biological NanoMechanics are addressed. Furthermore, specific tutorials are offered by clinicians, basic scientists and industrial experts on the current medical challenges in the diagnosis and cure of diseases; on computational modeling for biomedicine; and on the commercialization and regulation of medical devices. Cancer and cardiovascular, inflammatory, infection, degenerative and neurological diseases are considered, amongst others.

The target audience for NEMB2010 comprises scientists and clinicians involved in the development of new tools and materials in nanomedicine, experts from industry in the field of life sciences and all those investigating the potential of future emerging technologies. The inherent overlap of topics combined with multidisciplinary attendees from around the world presents significant opportunities for idea cross-fertilization among engineering professionals, scientists and clinical researchers.

## Location and Research Environment

The NEMB2010 conference will be held in Houston (TX) in proximity of the largest medical center in the country: the Texas Medical Center (TMC). With 46 not-for-profit institutions dedicated to the highest standards of biomedical research, education and patient care, TMC has about 6 million patient visits each year, US \$1.2 Billion in patient care and US \$1.0 Billion in research.

Located in Houston is also the Alliance for NanoHealth (ANH), the first multi-disciplinary, multi-institutional collaborative research endeavor aimed at using Nanotechnology to bridge the gaps between Medicine, Biology, Material Science, Computer Technology and Public Policy. The ANH comprises eight world-class research institutions: Baylor College of Medicine, M.D. Anderson Cancer Center, Rice University, the University of Houston, The University of Texas Health Science Center at Houston, Texas A&M University, University of Texas Medical Branch and The Methodist Hospital Research Institute.

7 major Research Centers have been recently appointed within the TMC with the objective of integrating NanoEngineering and Biomedical Sciences. These are the Center for Biological and Environmental Nanotechnology (Rice University); National Center for Macromolecular Imaging and Center for Protein Folding Machinery (Baylor College of Medicine); Medical NanoVector Research and Development Center, Telemedicine and Advanced Technologies Research Center (University of Texas Health Science Center-Houston), Breast Cancer Research Program Innovator Award and Center for BioNano Scaffolds.

Houston is also the home of the NASA Johnson Space Center and its Space NanoHealth Laboratory (SNL), established in 2006, with the objective to be of service in the solution of problems concerning the health care of astronauts in space exploration missions as from the "Bioastronautics Critical Path Roadmap".

## Plenary Speakers:

- **Mauro Ferrari**, *University of Texas Health Science Center at Houston*
- **Andrew C. von Eschenbach**, *Former Director NCI, Commissioner FDA*
- **Nicholas A. Peppas**, *The University of Texas at Austin*
- **Paolo Dario**, *Scuola Superiore Sant'Anna - Italy*
- **Eiji Osawa**, *Nanocarbone Research Institute - Japan*
- **Michael Teitell**, *University of California Los Angeles*
- **Albert van den Berg**, *University of Twente - The Netherlands*
- **Viola Vogel**, *Swiss Federal Institute of Technology ETH Zurich*

### Nobel Laureate Panel with

- **Ferid Murad**, *University of Texas Health Science Center at Houston*
- **Robert F. Curl Jr.**, *Rice University*

## Conference Topics:

Papers are solicited in the following areas:

### Track 1: NanoEngineering for Medical Diagnostics

*Track Chairs:*

- **Scott Manalis** *Massachusetts Institute of Technology*
- **Thomas G. Thundat** *Oak Ridge National Laboratory (ORNL)*
- **Vijay K. Varadan** *University of Arkansas Fayetteville*

### Track 2: NanoEngineering for Imaging

*Track Chairs:*

- **Ananth Annappagada** *University of Texas Health Science Center Houston*
- **Katherine W. Ferrara** *University of California at Davis*
- **John D. Hazle** *The University of Texas M. D. Anderson Cancer Center*
- **Massoud Motamedi** *The University of Texas Medical Branch*

### Track 3: NanoEngineering for Medical Therapeutics

*Track Chairs:*

- **Paolo Decuzzi** *The University of Texas Health Science Center Houston and University of Magna Graecia - Italy*
- **Joseph DeSimone** *The University of North Carolina at Chapel Hill*
- **Omid Farokhzad** *Harvard Medical School / Brigham and Women's Hospital*
- **Ramanan Krishnamoorti** *University of Houston*
- **Vijay K. Varadan** *University of Arkansas Fayetteville*

### Track 4: Nano-/Micro-fluidics for Medical Diagnostics and Therapeutics

*Track Chairs:*

- **Rashid Bashir** *University of Illinois at Urbana-Champaign*
- **Albert van den Berg** *University of Twente - The Netherlands*
- **Michael Hughes** *University of Surrey - UK*

### Track 5: NanoEngineering for Regenerative Medicine

*Track Chairs:*

- **Antonios G. Mikos** *Rice University*
- **Michael Sacks** *University of Pittsburgh*
- **Samuel I. Stupp** *Northwestern University*

### Track 6: Manufacturing for Nanomedicine

*Track Chairs:*

- **Shaochen Chen** *The University of Texas at Austin*
- **Wei Li** *University of Washington*
- **Jack Zhou** *Drexel University*

### Track 7: Materials for Nanomedicine

*Track Chairs:*

- **Dean Ho** *Northwestern University*

- **Tzung Hsiai** *University of Southern California*
- **Wing Kam Liu** *Northwestern University*
- **Eiji Osawa** *NanoCarbon Research Institute - Japan*
- **Michael Teitell** *University of California Los Angeles*
- **Yonhua Tzeng** *National Cheng Kung University - Taiwan*
- **Jennifer West** *Rice University*

### Track 8: Multiscale modeling in biological systems

*Track Chairs:*

- **Paolo Decuzzi** *The University of Texas Health Science Center Houston and University of Magna Graecia - Italy*
- **Martin Ostoja-Starzewski**, *University of Illinois at Urbana-Champaign*
- **Constantine Pozrikidis** *University of Massachusetts at Amherst*

### Track 9: Biological NanoMechanics

*Track Chairs:*

- **Nadrian C. Seeman** *New York University*
- **Viola Vogel** *Swiss Federal Institute of Technology ETH Zurich*

### Track 10: Bio-NanoRobotics

*Track Chairs:*

- **Paolo Dario** *Scuola Superiore Sant'Anna - Italy*
- **Sylvain Martel** *Ecole Polytechnique of Montreal - Canada*

### Special Track: Nanomedicine in Space

*Track Chairs:*

- **Neal R. Pellis** *NASA*
- **Scott Parazynski** *NASA Astronaut*

## Tutorials:

### NanoEngineering tools for Biomedicine

Modeling, design and fabrication of medical devices such as cantilever beams; nanoparticle based systems for drug delivery, biomedical imaging and physical therapy; microfluidic devices and biosensors.

*Speakers: J. DeSimone, P. Decuzzi, M. Ostoja-Starzewski, T. Thundat*

### Challenges in Biomedicine for Engineers

Clinical applications of nanotechnological tools in fields as oncology (breast, liver, ovarian/prostate cancer), cardiology, gynecology, trauma and orthopedics.

*Speakers: G. Lopez-Berestein, D.D McPherson, R. Pasqualini, A.K. Sood*

### Regulation and Commercialization of NanoEngineered Medical Devices and Materials

Early and midstage industrial developments of nanotechnological tools for biomedical applications and regulatory procedures for the bench-to-bedside translation.

*Speakers: C. Anzalone, R. Goodall, S.E. McNeil, W.R. Sanbai*

### NanoEngineered Theragnostics & Therapeutics I & II

Novel approaches towards theragnostic nanosystems and active drug release from devices and nanoparticles induced by external stimuli, e.g. Light, pH, US, etc.

*Speakers: D. Ho, T. Hsiai, C. Li, W. K. Liu, E. Osawa, M. Teitell, J. West*

### Computational Methods for the Cardiovascular System

Application of computational mechanics to the study of blood flow, vessel dynamics, and growth and remodeling in cardiovascular health and disease.

*Speakers: Charles A. Taylor, Jay D. Humphrey*